de Schweinitz (G. E.)

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ACUTE UNILATERAL OPTIC NEURITIS,

WITH THE REPORT OF A CASE.

BY

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OPHTHALMIC SURGEON TO THE PHILADELPHIA AND CHILDREN'S HOSPITALS AND TO THE INFIRMARY FOR NERVOUS DISEASES.

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ACUTE UNILATERAL OPTIC NEURITIS,

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OPHTHALMIC SURGEON TO THE PHILADELPHIA AND CHILDREN'S HOSPITALS AND TO THE INFIRMARY FOR NERVOUS DISEASES.

[Read October 10, 1888.]

Cases of sudden failure of sight in one eye with little or no ophthalmoscopic changes are occasionally encountered, in which the attack is attributed to exposure to cold. Sometimes in these instances congestion of the optic disk is present, and a retro-ocular neuritis has taken place. Other cases of acute optic neuritis, sometimes monocular, sometimes double, are on record. Thus Max Haadel[1] observed nine cases, some single and some double, with and without defects in the field of vision, usually with serious disturbance of sight, mostly with pronounced inflammation of the papilla and neighboring retina, in which exposure to a draught of air was the imputed cause. Periostitis at the foramen opticum was doubtful, and the absence of syphilis, sugar and albumin, lead and other poisons was assured in every case. In M. Schlüter's[2] statistics, among thirty-eight cases of neuritis and neuro-retinitis, seven are classed as primary, while the remainder are arranged as follows: thirteen of central origin, six from specific causes, four followed as the result of pathological orbital processes, two from abuse of alcohol and tobacco, two from albumin, and one each in connection with the puerperal state, after injury, from acute myelitis, and from hereditary reasons. E. Schmidt,[3] in an examination of the cases of optic neuritis in the clinic of Prof. Hirschmann, at Charkow, found, among 120 cases in which the etiology was recorded with some degree of exactness, two instances of papillitis

[1] Max Haadel, Inaug. Diss., Berlin, 1885. Abst. Centralbl. f. Prakt. Augenheilk., p. 223, 1885.
[2] Schlüter, Inaug. Diss., Berlin, 1881. Abst Nagel's Jahresbericht, xii. Jahrgang, p. 305.
[3] Schmidt, Wjestnik Ophth., 1885, p 273 Archives of Ophthalmology, vol. xv. p. 249.

or papillo-retinitis due to cold. Voissius[1] has recorded a case of monocular optic neuritis in a man aged sixty-one, the attack coming on as the result of catching cold during a long wet drive. Recovery, with a hemiopic defect in the field of vision, was the outcome of the disorder. Roi[2] reports some examples of optic neuritis which he looked upon as rheumatic. They appeared monocular, were accompanied by a speedy diminution of visual acuity passing into amaurosis, but not, however, to the exclusion of a return to normal sharpness of sight. H. F. Hansell[3] describes two instances of acute optic neuritis of rheumatic origin, one monocular in a healthy married woman, and the other double in a man aged thirty-one. In each there was sudden loss of vision, swollen optic disks, and under treatment a rapid return to normal visual acuity. In Dr. Hansell's paper references to analogous cases are recorded, and L. W. Fox[4] has recorded an instance of acute monocular optic neuritis. Recently R. H. Derby[5] has reported a case of uniocular neuro-retinitis in a girl whose father had had syphilis, but who had no other manifestation of constitutional taint. There was at first a central scotoma, then optic neuritis. Light-perception was lost, but under mercurial inunctions and iodide of potash the swelling of the disk, which had amounted to 7 D., subsided, and fair vision was recovered. Cases of optic neuritis without evident cause are occasionally recorded, as one by Power.[6] The patient was an anæmic lad of seventeen; the neuritis was double; albumin and syphilis were absent; the lad had had two attacks of rheumatism and his father was gouty. Friedenwald[7] describes an instance of right optic neuritis in an otherwise healthy girl of fourteen, preceded by violent headache and other symptoms indicating grave cerebral disturbance, but in which perfect recovery followed. He classed her case with these examples of optic neuritis, referred to by Juler, occasionally met with in young girls, the cause assigned being some menstrual disturbance, the presence of which, however, careful inquiry often fails to elicit. Usually the neuritis is preceded by severe headache and the prognosis is unfavorable. No further reference to the many cases of neuro-retinitis described in connection with irregularities of the menstrual functions need be made. Hirsch-

[1] Voissius, Klin. Monatsbl. f. Augenheilk, xxi. p. 298.
[2] Roi, De la névrite optique rhumatismale, Paris, 1886.
[3] H. F. Hansell, Med. News, Aug. 7, 1886.
[4] L. W. Fox, Amer. Journ. of Ophthalmology, July, 1884.
[5] Amer. Oph. Med. Soc, 1888. N. Y. Med. Journ., Oct. 6, 1888.
[6] Power, Trans. Oph. Soc. U. King., vi. pp. 361–368, 1886.
[7] A. Friedenwald, N. Y. Med. Journal, Feb. 5, 1887.

berg[1] has seen several instances of primary optic neuritis, whose course is very typical. The disease is divided into three stages: the first, characterized by great visual disturbance, with slight ophthalmoscopic appearances; the second, by diminution of the visual disturbance and very marked inflammation of the disk; and the third, usually by almost complete recovery with pallor of the disk. The cases mostly occur in women, but are not connected with derangement of the sexual functions. Partaking somewhat of the nature of such cases, but not without a history of exposure as the exciting cause, is the subject of this communication.

Mrs. W., aged forty, consulted me on July 11, 1888, because for a week past she had suffered from neuralgic pains in and above the eyes, most marked upon the right side. Bright light was distressing and pain followed when the eyes were rolled upward; slight tenderness was apparent when pressure was made upon the right globe. The vision in each eye was $\frac{5}{\text{VII}_{\frac{1}{\text{II}}}^{\text{I}}}$, the amplitude of accommodation 3.5 D.; there was high insufficiency of the internal recti, so that a divergent squint was evident when the eyes attempted to fix a point 15 cm. distant. The fundus of each revealed no gross lesions, save a slight retinal haze around the upper and lower edges of the right disk, the deeper layers of which were gray. The maculas were normal and the refraction appeared to be a simple hypermetropia of 1.5 D. In the absence of any general derangement the peri-orbital pain was attributed to eye-strain, and atropia drops were ordered for the purpose of measuring the refraction error. The correcting glass proved to be + 1.5 s. and with it normal vision $\left(\frac{5}{\text{V}}\right)$ was acquired. During the application of the atropia the neuralgia disappeared. The drops were discontinued and the patient directed to return in two weeks. During the measurement of the refractive error, the patient, on several occasions stated that although she saw the same number of letters with the right eye that she did with the left, she failed to see them with the same distinctness; but no changes at this time were present in the fundus. This indistinctness gradually assumed the appearance of a definite, dark area in the field of vision, the peri-orbital pain returned, and five days after the last ophthalmoscopic examination had failed to discover any changes in the disk or retina, she returned with the vision sunken to ability to count fingers and well-marked right-sided optic neuritis. All edges of the disk were woolly and its upper margins entirely hidden, while a flame-shaped hemorrhage was situated above and to the inner side. The apex of the swelling was +3 D., the vessels were about normal in size, and the macula free from disease. The pupil was of medium size and acted sluggishly to light and shade. A few days before this time she had gone on an excursion with her children, became much overheated, and had afterward waded about in a neighboring brook. It was in the evening of this day that the neuralgia

[1] Hirschberg, Centralbl. für Prakt. Augenheilk., Nov. 1887.

returned, the definite dark area appeared in the field of vision, and shooting pains attacked the deep muscles of the thighs. Further examination proved an entire absence of any symptoms pointing to brain disorder; the heart and lungs were normal and the patient was not anæmic, there had been no suppression of the menstrual flow and this function was natural, no active uterine disease existed, except a slight prolapsus which was not then under treatment. The urine was free from albumin, sugar, and tube casts, and the last recent illness, several years before, had been an attack of peritonitis from which a good recovery had resulted. Dr. James Tyson, who saw the case in consultation, confirmed the accuracy of these examinations. Syphilitic infection and the action of lead or other poisons were carefully excluded. The vision continued to sink, and on the following day was reduced to faint quantitative light-perception and the disk, if anything, was slightly more swollen. The temple was freely leeched and the patient directed to take fifteen grains of salicylate of sodium before each meal, and seven and a-half grains of iodide of potash, with one-twenty-fourth of a grain of bichloride of mercury after each meal. Three days later, or on July 30th, the vision was slightly improved to the ability to see the hand move and the pain was distinctly better. The medicine was continued and small fly blisters ordered placed upon the temple. August 1st, the salicylate of sodium was discontinued, but the other medication continued, vision improved and large letters (Sn CC) were faintly recognized. August 6th, marked improvement, V.= $\frac{5}{XXXV}$; edges of the disk visible all around and only a faint remnant of the hemorrhage. August 20th, neuritis had practically subsided; V.=$\frac{5}{X}$, form and color fields normal in extent; no scotomata; ordered one-twenty-fourth of bichloride of mercury after each meal. September 9th, V.=$\frac{5}{VII\frac{1}{11}}$, disk pallid, and all traces of the neuritis had disappeared.

In the absence of any symptoms pointing to cerebral disturbance, with no uterine disease save a slight prolapsus and the history of a leucorrhœa no longer active; with the menstrual functions normal; with a healthy circulatory apparatus and the urine free from albumen, sugar, and tube casts, and with the direct account of overheating and exposure, we may fairly conclude that this was an instance of genuine, acute optic neuritis. The history shows that before any ophthalmoscopic changes were evident, and before there was any positive diminution in visual acuity, the field of vision was invested with a haze which afterward assumed a definite, dark form, probably coincident with the first appearance of the inflammation around the papilla and the loss of sight. Hence it is evident that the attack was in process of formation and was precipitated by the wetting of the feet and sudden cooling after an overheating. Cases of optic neuritis apparently due to exposure, as has been pointed out by Leber and others, are mostly monocular; and rheumatism, perhaps upon insufficient evidence, has

been cited as the cause. Gowers,[1] writing upon this point, says: "Neuro-retinitis has been loosely ascribed to rheumatism, but only on the ground that it has sometimes appeared to be due to cold." Rheumatic inflammation at the back of the orbit, however, according to the same author, may damage the optic nerve. Michel,[2] commenting upon a reported case of acute, peripheral retro-bulbar neuritis, remarks that he has never observed a "rheumatic" neuritis and considers the assertion of such as a mark of ignorance of the causes especially operative in the production of inflammation of the optic nerve.

Hansell (loc. cit) thinks "that a true rheumatic inflammation of the fibrous coat of the nerve between the optic foramen and the sclerotic" quite possible, but owing to the infrequent opportunity for section and examination admits that "our pathology is, at best, speculative." The central scotoma which existed in this and similar cases denotes an affection of the sheath of the nerve extending into its substance, not, as Hirschberg remarks, as would have been supposed before the macular fibres were discovered, a central inflammation extending outward. The prognosis depends to a certain extent upon the site of the lesion and the termination may be favorable, as in the case reported, or a permanent atrophy of the disk may result. Hirschberg (loc. cit), in his cases of primary optic neuritis, has found usually that the second eye is attacked; the interval may be days, or weeks, or months. Three of his cases illustrate this fact. A woman, aged forty-two, suddenly lost the sight of the right eye; in six days from the beginning of the attack this was well, but the left eye was attacked and optic neuritis developed; in three weeks recovery had taken place and the fundi were normal. In a second case a woman, aged twenty, had slight temporary loss of vision in the right eye three weeks before coming under observation for loss of vision in the left, which came on eight days before. Four months later she came with the right eye similarly affected, while the left had practically recovered. A third instance was that of a peasant girl, aged seventeen, who had her right eye attacked in 1878, recovered, and in 1884 had her left eye attacked, which also recovered.

The treatment has already been discussed. Leeching of the temple, followed by blisters, diaphoresis, together with the salicylates and iodide of potash, yield the best results. Improvement may take place before the remedies have time to take effect.

[1] Medical Ophthalmoscopy, 2d. ed. p. 230.
[2] Nagel's Jahresbericht, xvii. Jahrgang, p. 381.